

Further Fields of Medical Ozone



Applications

Ozone Therapy in the Clinic of ENT (Ear, Nose, Throat) Diseases

In the otorhinolaryngological praxis medical ozone is primarily used as a therapeutic agent with powerful bactericidal, virucidal, fungicidal properties, detoxication effect in the treatment of suppurative inflammatory diseases of ENT organs with consideration to their polyetiological factor. It also performs an important role in the stimulation of phagocytosis and regulation of cellular and humoral immunity.

In acute and chronic maxillary sinusitis it is recommended to use ozonated 0,9% sodium chloride solution for rinsing of maxillary sinuses through a catheter. (S.V.Pestov etc, 1998). The beginning of local ozone therapy induces an aggravation of inflammatory process in the mucous membrane of maxillary sinus (an increase in the neutrophils in washing solution removed from the sinus). On the 3rd-5th day of therapy the "neutrophile" phase is changing to the "reparative" one, it comes to general improvement, normalization in the indices of peripheral blood (A.B.Terentyeva, 1998). At the same time the patients receive minor autohaemotherapy with 200 mcg of ozone every two days, 4-6 procedures per one treatment course.

The conservative treatment of different forms of chronic tonsillitis includes systemic and local methods of oxidative therapy. The treatment course is repeated twice a year. The systemic treatment is carried out in the form of parenteral infusion of 200-400 ml of ozonated physiological saline at ozone concentration of 1000 mcg/L, 5 procedures per one treatment course every two days. The local treatment is performed as rinsing of lacunae of faucial tonsils with isotonic sodium chloride solution bubbled with ozone at concentration of 10000 mcg/L, 500 ml of solution per one procedure. After 3-4 procedures it comes to disappearance of pain, general intoxication, cleaning of lacunae from debris, decrease in the size of faucial tonsils (I.I.Akulich etc, 2000).

For treatment of chronic middle otitis it is recommended to use a complex ozone therapy. Along with bactericidal effect, the local use of ozonated physiological saline at ozone concentration of 7000-10000 mcg/L facilitates a decrease in the destructive phase of inflammation, reduces a risk of formation of scars and commissures in the tympanum.

The local use of ozonized olive oil "O'THREE-Ozonide" eliminates inflammation of postoperative cavities and facilitates fast epidermization (A.N.Tafintsev etc, 2000). The patients with intoxication symptoms receive parenteral infusions of ozonated physiological saline at a volume of 200 ml and ozone concentration of 1000-2000 mcg/L every two days, 5-7 procedures per one treatment course.

After 3-4 procedures it comes to stopping of pyorrhea, elimination of pain syndrome, decrease in intoxication, decreased growth of pathogenic flora or its disappearance (A.N.Tafintsev etc, 2000).

Ozone therapy is considered a pathogenetically verified method in the treatment of

sensorineural pathology as the main link of pathogenesis of deafness is cochlea hypoxia associated with vascular, toxic and other pathological conditions. Along with generally accepted methods of treatment, N.A.Miroshnichenko recommends to use intravenous infusions of ozonated physiological saline at volume of 400 ml and ozone concentration of 1000 mcg/L every two days, total number - 5-7 procedures. The complementary use of ozone therapy facilitates faster normalization of general condition, improvement of hearing or disappearance of noise in the ears, intensification of reparative processes, stimulation of intracellular synthesis of antioxidants.

Major trauma of ENT tissues due to firearm injury causes an explosion of lipid peroxidation processes and decompensation of antioxidant defense. The considerable blood lost leads to tissue hypoxia and weakening of the organism's immune defense, wound infection with microflora resistant to antibiotics and antiseptics. Suppuration of wounds can lead to more threatening complications.

The use of oxidative therapy in the complex treatment of ENT wounds facilitates a faster restoration of haemodynamical disturbances, elimination of tissue hypoxia, elimination of misbalance of oxidoreduction processes.

The preparation for surgery includes the use of intravenous infusions at volume of 400 ml of ozonated physiological saline and ozone concentration of 2000 mcg/L. During the operation the patient receives 200 ml of ozone-enriched blood of the same group. The postoperative treatment includes rinsing of wounds and mucosa at the damaged area with ozonated physiological saline at bactericidal concentrations of 5000-10000 mcg/L (I.I.Akulich, S.V.Semenov, 2000). This therapeutic complex considerably reduces the number of complications, shortens treatment duration and improves the outcomes of injury. In the ophthalmology medical ozone is used in the complex of therapeutic modalities at the early stage of Leber's optic atrophy and retinal dystrophy of I-II grade. Thanks to variety of mechanisms of its therapeutic action: improvement of metabolism with increase of pO₂ (intensification of oxidoreduction extra- and intracellular processes, synthesis of biologically active substances) it comes to a positive result in the treatment of diseases usually associated with serious difficulties. Ozone therapy is carried out in the form of intravenous infusions (drips) of ozonated physiological saline at ozone concentration of 800-1000 mcg/L.

One treatment course consists of 5-6 infusions every two days (N.L.Malanova etc, 1995). The results of the performed oxidative therapy manifest as an increase in eyesight sharpness. Any side effects of treatment have been not observed.

Ozone Therapy in the Addictology

The applicability of medical ozone in the addictology is explained by its ability to synthesize the biologically active substances (catecholamin, serotonin, histamine etc), initiate the endogenous detoxication mechanisms (utilization of the underoxidated products, restoration of pH, decrease in the end products of nitrogen metabolism, improvement in the function of liver, kidney, lung) at the level of the whole organism that results in the improvement of the oxygen-transport function of blood.

In the addictology it is recommended to use the systemic methods of ozone therapy: intravenous infusions (drips) of ozonated physiological saline, major autohaemotherapy with ozone, rectal ozone insufflations.

Treatment should be started with intestinal cleansing (the apparative one is preferable) with the follow-up introduction of ozone/oxygen gas mixture per rectum at a volume of 300 ml and ozone concentration of 3000 mcg/L. One treatment course consists of 6-8 procedures every two days. In combination with rectal ozone insufflations the patient receives intravenous infusions (drips) of ozonated physiological saline at volume of 400-600 ml daily (200 ml 2-3 times a day within the infusion detoxication program). Ozone concentration used for saline bubbling is 1500-2000 mcg/L. In case of hepatic insufficiency infusions of ozonated saline can be replaced by major autohaemotherapy with 1000-2000 mcg of ozone 3 times a week, 8-10 procedures per one treatment course. During the course of ozone therapy it is necessary to use antioxidants in a sufficient quantity.

The use of ozone therapy allows more quickly and effectively to eliminate sever abstinence conditions. It comes to improvement of appetite, normalization of sleep, decrease in the intensity of muscular pain and intoxication symptoms.

Ozone Therapy in the Sports Medicine

There are many mentions about the great role of ozone therapy in sports medicine including sports traumatology, detoxication, fast restoration within a competition period, ability to reach a sporty shape peak for a short time and keep it as long as necessary.

The erythrocytic mechanism of action of medical ozone (electrophylic addition of erythrocyte membrane to double bonds of unsaturated fatty acids and herewith connected formation of short-chain peroxides, reactive shift of the oxygen-hemoglobin curve to the right, improvement in release of oxygen to peripheral tissues) improves oxygen utilization in the periphery by increasing exercise capacity parameters. The Western ozone doctors use in sports medicine major autohaemotherapy with a total ozone dose of 1000 mcg (three times a week, n = 10), but the Russian ozone doctors recommend to replace major autohaemotherapy with intravenous infusions of ozonated physiological saline (at a volume of 200 ml, ozone concentration of 1200 mcg/L, every two days, n=8). It was observed that through ozone therapy in many professional sportsmen it came to objective signs showing improvement of anaerobic metabolism being important for subjective trainings before competition and shortening of the restorative period. Obvious results come not immediately after the first course of ozone therapy, but often after 2-3 courses as physical adaptation requires some time to react to the given stimulants. An interval between the courses - 4-6 months, it's recommended to perform a course before the competition.

According to Prof. Peretyagin ozone therapy can be successfully used at different stages of the competition period:

- pre-competition period, pre-season trainings. Of great importance is intensification of metabolic processes, enzymatic systems. Ozone introduced by parenteral way acts like a specific biostimulator.

- re-adaptation within the competition period. Of great importance is powerful oxidative detoxication provided through ozone therapy.
- restoration after the competition period characterized by physical, nervous and psychic exhaustion of the organism.

Among our customers (users of our ozone machines) there are sports doctors of many professional teams, for example, in cycle racing, ice hockey, shooting etc. For understanding reasons the successfully acting sports doctors don't publish their results on antidopping programs and other information regarding trainings of sportsmen, particularly in professional sports. Anyhow there are many publications on ozone therapy that can be applied to sports medicine as well (on detoxication, increase in exercise capacity, immunorehabilitation, restoration of shape, traumatology etc.).

<http://www.medozons.com/ozone-therapy/ozone-therapy-in-different-fields-of-medicine/further.html?d332a660b3c28160d198d5af644ab928=b566c2ee4>